FEB 11 1985

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DRAFT TECHNICAL REPORT NO. 5

PHASE 4 STAGE 3C

SELECTION OF PREFERRED SITE

SOCIAL IMPACT ASSESSMENT

[illegible] SCHUFF CONSULTANTS LIMITED

URBAN DOCUMENTATION CENTRE
RESEARCH UNIT FOR URBAN STUDIES
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HAMILTON, ONTARIO

ENVIRONMENTAL ASSESSMENT
LANDFILL COMPONENT OF SOLID WASTE MANAGEMENT

HALTON

[illegible]

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SUMMARY

1. The results on Population Impact are based on responses to questionnaires and telephone surveys from 306 of the 361 households in a Site Plan Area or in the study area at each of the six sites being evaluated.

2. This represents an over-all response rate of 84.7%.

3. Evaluation of the Population Impact was based on five sub-factors: dislocation of households and residents in the Site Plan Area; disruption of households and residents in the study area; emotional impacts; disruption of an established community; and impact on special population groups. A lower value on these sub-factors results in a more favourable rating.

4. Interviews were held with people responsible for community facilities to identify their concerns about the impact of a landfill on their facility.

5. Impact on community facilities following the implementation of mitigation measures was also assessed.

6. Site Plan Area F is the most preferred site with respect to Population Impact. There are no households on-site, and the fewest number of households in the study area. Consequently, it ranked as the site with the least impact on all the population sub-factors.

7. Site Plan Area E is the second most preferred with respect to Population Impact. The site consistently ranks second on the population impact factors, with the exception of its ranking first on the sub-factor for disruption of an established community.

8. Overall, Site Plan Area D is the third most preferred site on the Population Impact factor.

Site Plan Area D ranks third on the impact on people in the Site Plan Area; fourth on the number of people and households in the study area; third on the number of children 16 and under in the study area, and third on the number of households with children in the study area. It is tied with Site B for emotional impact (rank 3.5), ranks fourth on disruption of an established community, and third on the special population group sub-factor.

9. Overall, Site Plan Area A ranks fourth in preference, on the basis of Population Impact.

Site Plan Area A ranks fourth on the impact on the number of people in the Site Plan Area; fifth with respect to the number of people and households in the study area and the number of households in the study area with children sixteen and under, and has the highest number of children sixteen and under in the study area. It also ranks highest on the sub-factor dealing with disruption of an established community, and fifth on the emotional impact sub-factor. It also ranks fifth on the sub-factor for special population groups.

10. Overall, Site Plan Area B ranks fifth in preference, on the basis of Population Impact.

Site Plan Area B ranks sixth on five of the seven measures of impact on people in the Site Plan Area, but ranks third with respect to the number of people and households in the study area. It has the fourth highest number of children under 16 in the study area, and the fourth highest number of households with such children. It is tied with Site D (rank 3.5) on the emotional impact sub-factor, ranks fifth on disruption of an established community and fourth on the special population groups sub-factor.

11. With respect to its ranking on Population Impacts, Site Plan Area C is the least preferred site.

    Site Plan Area C ranks fifth or sixth on all but one measure of impact on people in the Site Plan Area, and also ranks fifth or sixth on four of the five measures related to impact on people in the study area. It ranks sixth on emotional impact and on impact on special population groups, and fourth on the sub-factor for disruption of an established community.

12. The final ranking with respect to the impact of a landfill on Population is:

	Site
Most Preferred:	F
	E
	D
	A
	B
Least Preferred:	C

13. The impact of a landfill on Community-Serving Facilities will be less than the people responsible for those facilities have indicated, when mitigation measures are taken into account.

14. There will be no direct impact on Community-Serving Facilities as a result of landfilling on Site A, and the impact is rated Low.

15. The Welding Institute of Canada is on the 55dB Leq noise contour for Site B; the impact of landfilling is therefore rated Moderate.

16. The Welding Institute of Canada is within the 55dB Leq noise contour for Site C. The impact of landfilling on Site C with respect to community facilities is rated High.

17. It will be possible to see landfilling at Site D from the Milton District Hospital, though this will be relatively easy to screen. Site D is rated Moderate with respect to the impact of landfilling on community facilities.

18. Landfilling at Site E would also be visible from the Milton District Hospital. The site is rated Moderate with respect to the impact of landfilling on community facilities.

19. Landfilling at Site F would affect the use of Bayview Park; there would be noise impact during a three- to four-year period while the northern portion is being filled. Even if the activities at the park were moved to another location, the ratio of parkland to population would remain above the guidelines stated in the Parks and Recreation Master Plan for the City of Burlington. With this mitigation measure in place, there would be no impact on community facilities as a result of landfilling at Site F. The impact on Community-Serving Facilities is rated Low.

20. The final ranking with respect to the impact of a landfill on community facilities is:

	Site
Most Preferred:	F
	A
	B
	D
	E
Least Preferred:	C

1.0 INTRODUCTION

The task in Stage 2C of the Environmental Assessment for the Halton landfill component is to select a preferred landfill site based on the information obtained from a more detailed assessment of the six Candidate Sites. The social impact assessment constitutes one component of the Stage 2C analysis.

The goal of the social impact assessment is to identify the social impacts of a landfill on-site (Site Plan Area) and in the surrounding area at each of the six Sites identified in Stage 2B, and to use this information along with other evaluation factors to select a preferred location for landfill. This report provides a ranking of the Site Plan Areas based on the social impact evaluation factors. The overall ranking of the sites is included in the draft Stage 2C Summary Report.

Six major evaluation factors are considered under the Social Environment. These are listed below:

- Population Impact, with five sub-factors:
  - Dislocation of households and residents on site (i.e., in the Site Plan Area).
  - Disruption of households and residents in the study area near the landfill.
  - Emotional impacts
  - Disruption of an established community.
  - Disruption of unique and special population groups.
- Social Equity
- Community Facilities
- Airborne Contaminants
- Noise

. Visual Impact

. Existing and Future Land Use

The first three evaluation factors, i.e., Population Impacts, Social Equity and Community Facilities, are addressed in this report. Technical reports on the remaining four factors: Airborne Contaminants; Noise; Visual Impact; and Existing and Future Land Use, are presented separately. The results of these technical reports have been incorporated into this report where appropriate, in a discussion on Social impacts, and references to these Technical Reports are made in the text as required.

1.1 Definitions

The following definitions are clarified within the context of this report:

Candidate Sites:	Refers to the six potential landfill sites identified in Stage 2B, Selection of Candidate Sites.
Site Plan Area:	Refers to the actual area of landfilling selected within each of the six candidate sites. The Site Plan Areas are reduced in size from the original Candidate Site, with the exception of Site F, which remains the same.
On-site:	Refers to the Site Plan Area.
Study Area:	Refers to the 0.8 km (0.5 mile) boundary around the original Candidate Sites. The study area boundaries were reviewed in Stage 2C and, in some cases, adjusted according to site-specific conditions.

2. POPULATION IMPACTS

2.1 Data Collection

In May 1984, questionnaires were sent out to all households living on a Candidate Site or in the study areas, using the Region's assessment list to identify appropriate households. Questionnaires were also sent to individuals owning property in the study area, regardless of where they lived, to determine how the property was used and whether the owners derived any non-monetary benefits (e.g., as a second home or for recreational purposes) from the property.

A total of 410 questionnaires were mailed; 201 questionnaires were completed and returned for an overall completion rate of 47%. Of these, three were excluded because they were with respect to properties which were used only for commercial purposes. (This was not evident from the mailing list; where an issue was unclear, the consultants erred on the side of caution. In this case, questionnaires were sent to these people in case they also lived on the property and the decision to exclude them from the analysis was based on information contained in the completed questionnaire).

Of the remaining 198 questionnaires, thirty were received from people who owned property on the Candidate Sites but lived elsewhere. These questionnaires were excluded from the analysis of population impacts, since they are primarily intended to focus on individuals and households living on-site or in the study areas.

Questionnaires from industries and businesses were excluded from the analysis in this section, also on the grounds that the social impact is intended to focus on individuals and households living on-site in the study areas.

The impact of a landfill on properties used exclusively for commercial use and on properties held by individuals or corporations for investment purposes is considered as part of the economic assessment.

In assessing the social impacts of each of the six Site Plan Areas, no distinction was made between resident tenants and resident owners. In cases where an individual rented land in the Site Plan Area or study area but did not live there, this was taken into account in assessing impacts for economically related sub-factors, such as Income from Activities On-site, Income from Activities On-site for People 46 Years of Age and Over, Income from Activities in the Study Area, and Stress from Uncertainty about the Future, since a landfill could potentially affect them. Since they would not be affected by the non-economic sub-factors of population impact, they were not included in the evaluation of these impacts.

A follow-up telephone survey was conducted in order to obtain some key data from those individuals living in the Site Plan Areas and in the study areas who did not return a mailback questionnaire or did not receive a questionnaire in the original mailing. A total of 112 persons were interviewed. Questions were asked on household composition (i.e., number of people in the household and their ages); proportion of household income generated from activities on the site or in the study area; and whether any members of the household earned all or part of their income as artists, craftsmen, etc. These questions were chosen to convey a profile of important socio-economic characteristics of the Site Plan Areas and study areas.

A preliminary social impact assessment was undertaken on the basis of the Candidate Sites from the Stage 2B analysis, and data from the preliminary social impact assessments was used in determining the Site Plan Areas.

When the boundaries of the Site Plan Areas were determined, resulting in a reduced site size (except Site F), no changes to the study area boundaries were made. Households which had been previously considered on-site were considered as part of the study area.

The completion rate for the survey of households on-site and in the study area are shown in Table 1.

Of the 361 households on the original Candidate Sites or in the study area combined, completed questionnaires or phone surveys were obtained from 306, for a total response rate of 85%. Information was not obtained from the remaining 54 households for the following reasons:

- Unlisted phone numbers - 4 (1 each at Sites B and F, 2 at Site C)
- Residents would not answer questions - 4 (1 each at Sites A, C, D, E)
- Could not be reached - 8 (3 at Site C, 1 at Site D, 2 at Site E, 2 at Site F)
- No up-to-date name of occupant and/or Bell Canada information had no listing for the name which appears on the assessment rolls - 40 (8 at Site A, 9 at Site B, 11 at Site C, 8 at Site D, 4 at Site E)

It is difficult to assess the nature of bias introduced by the inability to obtain information from these households. The one of greatest concern, because it represents the largest number of people, is any possible bias introduced by the inability to contact residents for which there was no up-to-date name on the assessment rolls and/or Bell Canada did not have a phone listing. It is likely that some of these residences are vacant; however, in the absence of additional information, it has been assumed that these residences are <u>not</u> vacant, and that the nature of the households is similar to other households in the study area.

2.2 Study Area Boundaries

The initial determination of the study area was based on the 0.8 kilometre (0.5 mile) boundaries of the candidate sites in keeping with the procedures used in Stage 2B. However, in recognition of the fact that in some cases this could result in an artificial distinction (for example, between near neighbours, one of whom was within the study area and one of whom was beyond it), members of the study team and members of Regional staff toured the area around each of the six Candidate Sites to determine where changes

TABLE 1

COMPLETION RATE FOR QUESTIONNAIRES AND TELEPHONE SURVEYS

	Total Number of Households	Questionnaires Returned		Completed Telephone Surveys		Completed Questionnaires and Telephone Surveys	
		Number	Percent	Number	Percent	Number	Percent
Site A							
On Site	3	1	33.3	2	66.6	3	100 %
Study Area	74	46	62.2	19	25.7	65	87.8
Total	77	47	61.0	21	27.3	68	88.3
Site B							
On Site	11	7	63.6	4	36.4	11	100 %
Study Area	59	31	52.5	18	30.5	49	83.1
Total	70	38	54.3	22	31.4	60	85.7
Site C							
On Site	8	4	50.0	4	50.0	8	100 %
Study Area	83	31	37.3	35	42.2	66	79.5
Total	91	35	38.5	39	42.9	74	81.3
Site D							
On Site	3	2	66.6	1	33.3	3	100 %
Study Area	72	43	59.7	19	26.4	62	86.1
Total	75	45	60.0	20	26.7	65	86.7
Site E							
On Site	3	3	100.0	--	--	3	100 %
Study Area	31	19	61.4	5	16.1	24	77.4
Total	33	22	66.6	5	15.2	27	81.8
Site F							
On Site	0						
Study Area	14	4	28.6	7	50.0	11	78.6
Total	14	4	28.6	7	50.0	11	78.6

to the study area were warranted. Modifications to the study area boundaries were based on existing land use patterns and natural or man-made features which created a typical barrier.

At Site A, the study area was expanded north to include both sides of Lower Base Line Road between Sixth Line and Ninth Line. Further extensions of the study area boundaries to the west and south include some properties on Burnhamthorpe Road and Trafalgar Road respectively.

At Site B, the southern limit of the study area was increased to include the intersection of Burnhamthorpe Road and Sixth Line. A new area was included on the vicinity of the Hydro corridor south of Dundas Street. A small cluster of houses south of Dundas Street on Fourth Line was also added to the study area.

At Site C, the southern limit of the study area was enlarged to include Dundas Street from Sixth Line to Highway 403. The intersection of Dundas Street and Sixth Line was included along with Fourth Line south of Dundas Street. The eastern limit of the study area was expanded to include some properties on Burnhamthorpe Road.

In the case of Site D, the southern limit of the study area was extended to include both sides of Lower Base Line Road from First Line to Highway 25. The eastern limit was expanded to Sixteen Mile Creek. The northern limit was expanded to include additional residences on First Line and Highway 25.

At Site E, the northern limit of the study area was extended to include the intersection of Derry Road and Bell School Line. The CN Rail line was used as a natural separation between the study areas of Site D and Site E.

At Site F, the western limit of the study area was expanded to include some residences in the Rennick Road/Old Waterdown Road area. In addition, an area of vacant and industrial land lying between Highway #403 and the CN Rail line was included to the south.

It was originally anticipated that the North Service Road might be a potential haulage route and, consequently, the study area was expanded in Stage 2C on the North Service Road to Brant Street.

To illustrate the above general descriptions, mapping of the study areas used in Stage 2C is included, in the accompanying Noise Assessment Technical Report.

2.3 Determination of Ratings

Because there are no absolute standards against which to measure social impacts, it is necessary to develop a system for determining what constitutes low, moderate and high impacts. The procedure used in this report involves taking, for each measure, one-third the maximum value for a measure as the upper limit of the low impact category, and constructing intervals for the moderate and high category with the same category width as was used for the low category.

For example, the maximum number of people living in a site plan area is 32 at Site B (see Table 2). To obtain the category width for high, medium and low on this measure, 32 is divided by 3 to yield a category width of 10.7. The range of values for the low category are thus 0 - 10.7. The range for the medium category is obtained by adding 10.7 (the category width) to the lowest value in the medium category (10.8). Thus, the range of values for medium impact is 10.7 to 21.5 (i.e., 10.7 + 1.8). The same procedure is used to obtain the range of values for the high impact category (21.6 to 32.3).

2.4 Dislocation of Households and Residents On-site

a) Measures of Dislocation

These measures are intended to assess the disruption of lifestyle and dislocation which would occur to individuals and households located in the Site Plan Area, who would be forced to move if the

Site Plan Area were selected as the preferred location for landfilling.[1]

Number of People On-Site. This measure reflects the number of people who would experience the maximum disruption and dislocation if the site were chosen, since these people would have to relocate their homes.

Obviously, once these people will move off the site, they will not experience some of the other social impacts (e.g., noise, dust, odour, litter, visual impact) that may or will be experienced by those remaining in the vicinity of the site. A major goal of the social impact assessment is to minimize the number of people who will have to relocate.

Number of Households On-Site. The need to move is disruptive to households as well as individuals. The loss of a residence and related pressure of finding another residence, preparing to move, and settling into a new residence may put stress on the household, such as on relationships among the members of the household, above and beyond the strain felt by the individual members.

Number of People 66 Years and Over On-Site. There is strong evidence in the literature on aging which suggests that elderly people who experience forced relocation can experience marked physical and mental deterioration, even if the quality of their physical surroundings improves following the move. In extreme

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1 See Gans, Herbert. The Urban Villagers, New York: The Free Press, 1962, for a detailed account of the psychological effects of forced relocation.

cases, an involuntary move can result in death.[2] This measure has been included to reflect this potential impact.

Income from Activities On-Site. As disruptive as relocation due to landfilling may be to any individual on-site we believe it is especially so for those who earn all or part of their income from activities carried out in their home or on the land. In addition to locating another residence, they may need to find another suitable location for the income-generating property, which is a more complex task. In the case of farmers, they will have to find not only a home but suitable farm land; other people who work out of their home or other buildings on the property may have adapted these to fit their particular needs and may find it difficult to find another house and/or building which is suitable. People who sell their products to the general public may find their clients are not prepared to follow them to their new location, and in any case all these individuals will experience some disruption of their income as they look for another location, move, settle in, and re-establish their businesses.

In order to summarize the complex data on income generated from on- site activities, an index was generated. The number of respondents falling into the six response categories used in the questionnaire (0-10%, 11-24%, 25-49%, 50-74%, 75-89%, 90-100%) was multiplied by the midpoint of each category (5%, 17.5%, 37%, 62%, 82%, 95%) and the values were added to provide an index of income. It should be noted that this is a summary index for each site, and does not represent an absolute value. It does, however, permit the rank-ordering of each site on this measure.

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2 Zais, James and Thibodeau, Thomas. The Elderly and Urban Housing. Washington, DC: The Urban Institute Press, 1983, pp 81-82. For many elderly a residential move is involuntary due to their strong desire to stay where they are.

Income from Activities On-Site for People 46 Years and Older. While it is difficult for any individual who earns part of his/her income from on-site activities to have to move, this is likely to be especially so in the case of people 46 years and over. Younger people, however reluctantly, are more likely to seek and obtain employment in their chosen field or move into a new field; for people over 46, this is a less viable option, given many employers' reluctance to hire older persons. In addition, the possible disruption in earned income for people who have to move off-site may be especially problematic for those 46 and over, since it is at this age that economic planning for retirement becomes more important. To be facing possible economic uncertainty or disruption at a time when planning for the future is being undertaken constitutes a negative impact on the lives of these people.[3]

The method of establishing the index measure used here is the same as the one described above, for Income from Activities On-site, but is based only on data from households containing at least one member over 45 years of age.

Number of Households with More Than Four Members. The larger the household, the fewer alternative housing options are available to

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3 See Table 4 "All returns by age and sex, Canada 1981 taxation year," Taxation Statistics 1983 Edition, Revenue Canada. Item 38, "Retirement Savings Plans Premiums," when juxtaposed with population figures for Canadians aged 25-44 and 45-64, indicates that 12.3% in the former age category take out RSSP's compared to 19.7% in the latter.

it and the more difficult it becomes to move.[4] The number of households with more than four members has been included as a social impact measure in order to take this into account.

Number of Children 16 Years and Under Living On-Site. The social world of children is more restricted than that of adults and tends to be neighbourhood-based. Their friends come from the area in which they live and from their schoolmates.[5] If forced to move, children 16 years and under may have to adjust to a new school and develop a new circle of friends. While children are, in the long run, quite adaptable, the short-term stress of relocation should be considered in the social impact assessment.

Table 2 shows the values for each Site Plan Area on the measures of dislocation described above.

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4 For supporting data, see Table 2 "Occupied Private Dwellings by Number of Rooms and Tenure, Showing Number of Persons per Household, for Canada and Provinces, Urban, Rural Non-Farm and Rural Farm, 1981" in Occupied Private Dwellings, 1981 Census of Canada (Statistics Canada Catalogue 92-932). See also Michelson, William. Environmental Choice, Human Behaviour and Residential Satisfaction. New York: Oxford University Press, 1977. This study shows that repeat mobility decreases as family size increases. The reason is that only a small percentage of families with more than four members live in apartments: large families, who tend to live in houses, select these dwellings for the purpose of permanently accommodating their numbers."

5 Michelson, William; Levine, Saul; and Spina, Anna-Rose. The Child in the City: Changes and Challenges, Toronto: University of Toronto Press, 1979, pp. 414-415.

(b) Ratings for Dislocation

The values used to rate the Site Plan Areas on these measures of dislocation are shown below:

. Number of People:	0 - 10.7	= Low
	10.8 - 21.5	= Moderate
	21.6 - 32.3	= High
. Number of Households:	0 - 3.7	= Low
	3.8 - 7.5	= Moderate
	7.6 - 11.3	= High
. People 66 and Over:	0 - 1.3	= Low
	1.4 - 2.7	= Moderate
	2.8 - 4.1	= High
. Households with More Than Four Members:	0 - 1.3	= Low
	1.4 - 2.7	= Moderate
	2.8 - 4.1	= High
. Children 16 Years and Under:	0 - 3.3	= Low
	3.4 - 6.7	= Moderate
	6.8 - 10.1	= High
. Index of Income:	Because these are indexes which reflect a relative rather than absolute value, sites will not be rated low, moderate or high on these measures. The relative rankings of the sites on these measures will be shown instead.	
. Index of Income for People 46 Years and Over:		

Table 3 shows the final rating of the Site Plan Areas based on the above rating system.

2.1 Disruption of Households and Residents in the Study Area

(a) Measures of Disruption

These measures are intended to assess the possible disruption to those individuals and households living within the study area surrounding the Site Plan Areas. Possible effects on lifestyle and quality of life resulting from noise and from the visual

TABLE 2

MEASURES OF DISLOCATION

Measure	Site A	Site B	Site C	Site D	Site E	Site F
Number of People	11	32	31	10	7	0
Number of Households	3	11	8	3	3	0
People 66 Years and over	2	4	1	2	2	0
Income from Activities On Site	195	569	271	132	72	0
Income from Activities On Site for People 46 Years and older	100	569	224	92	62	0
Households with More than Four Members	1	0	4	0	0	0
Children 16 Years and Under	2	1	10	0	1	0

TABLE 3

RATINGS FOR DISLOCATION

Measure	Site A	Site B	Site C	Site D	Site E	Site F
Number of People	M	H	H	L	L	L
Number of Households	L	H	H	L	L	L
People 66 Years and over	M	H	L	M	M	L
Income from Activities On Site	5	6	4	3	2	1
Income from Activities On Site for People 46 Years and older	3	6	5	4	2	1
Households with More than Four Members	L	L	H	L	L	L
Children 16 Years and Under	L	L	H	L	L	L
Rating	L/M	H	H	L	L	L

impact of a landfill are specifically addressed under these components. Individuals and households will remain unless they choose to move, and may consequently experience some change in their lifestyle and a perceived decrease in their quality of life, although this is not the same as moving from an on-site location.

Number of People in the Study Area. The greater the number of people in the study area, the greater the number of people who will experience a real or perceived decrease in the quality of life as a result of their proximity to a landfill site. The fewer the number of people in the area surrounding the landfill, the less the potential for social impact will be.

Number of Households in the Study Area. The experience of a lifestyle is also a household experience as well as an individual experience. This is particularly true in the case of the six Sites being considered. Residents have repeatedly indicated that they have moved to these non-urban areas for the lifestyle they can enjoy with their families. Because of the real or perceived negative impact of a landfill on the activities of a household, the number of households in the study area has been included as a measure of disruption.

Income Derived from Activities in the Study Area. While people in the study area who derive all or part of their income from activities carried out in their home or on the land will not experience the same degree of disruption as those who live on-site and who will have to relocate, they may experience some disruption to their economic activity. Creative people such as artists, writers, artisans and craftspeople in the study areas expressed the opinion that their creativity and concentration

would be affected by living near a landfill. Research in this particular area also substantiates the opinions expressed.[6]

Market gardeners and people with pick-your-own operations may find the market for their products decreased because of public perceptions that products grown near a landfill are not healthy. These people, plus others (e.g., artists) who depend on the public coming to their place of residence to purchase goods or services, may experience a decrease in their markets if the public perceives the area to be visually unattractive or to be congested with traffic in the vicinity of the site. For these reasons, a measure of economic activity by residents in the study area has been included as part of the social impact assessment.

This index of economic activity was developed using the same procedure described under **Income Derived from Activities On-Site**. In this case, data from those living in the study area was used.

Number of Children 16 Years and Under in Study Area. Unlike children living on-site who will move away from the site, children in the study area will continue to live near the site. They therefore represent a special concern with respect to traffic safety in general and specifically the use of school buses in the vicinity of the Candidate Site haulage routes. Including this factor allows this concern to be incorporated into the social impact assessment.

Number of Households with Children 16 Years and Under in the Study Area. Parents with young children tend to be more

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6 Fromm, Erich. "The creative attitude." In Anderson, Harold (Ed.). Creativity and its Cultivation. New York and Evanston: Harper and Row, 1959. Fromm states that concentration is a requirement for creativity.

concerned about perceived possible negative health effects associated with living near a landfill site, and these concerns affect their sense of well-being. Including the number of households with children under 16 in the study area allows this to be taken into consideration during the social impact assessment.

Income from Activities in the Study Area for People Over 46 Years. It had originally been intended to include a measure of economic activity for people 46 and over in the study area. In order to calculate this measure it was necessary to know, for each household, both the proportion of household income obtained from activities in the study area and whether or not the household contained a person 46 or over. There were a large number of households in which respondents did not provide one or the other or both of these pieces of information, and it was decided not to include this measure, because it would have been inappropriate to extrapolate to the entire study area on the basis of those relatively few cases where the necessary information was complete.

Table 4 shows the values for each Site Plan Area on the measures of disruption described above.

(b) Ratings for Disruption

The values used to rate the sites on these measures of disruption are shown below:

. Number of People:	0 - 88.7	=	Low
	88.8 - 177.5	=	Moderate
	177.6 - 266.3	=	High
. Number of Households:	0 - 27.7	=	Low
	27.8 - 55.5	=	Moderate
	55.6 - 83.3	=	High

TABLE 4

MEASURES OF DISRUPTION

Measure	Site A	Site B	Site C	Site D	Site E	Site F
Number of People	244	205	266	233	98	39
Number of Households	74	59	83	72	31	14
Income from Activities in Study Area	2,309	1,514	2,309	2,408	965	190
Children 16 Years and Under	50	44	49	36	23	8
Households with Children 16 Years and Under	26	25	29	22	14	5

TABLE 5

RATINGS FOR MEASURES OF DISRUPTION

Measure	Site A	Site B	Site C	Site D	Site E	Site F
Number of People	H	H	H	H	M	L
Number of Households	H	H	H	H	M	L
Income from Activities in Study Area	4/5	3	4/5	6	2	1
Children 16 Years and Under	H	H	H	H	M	L
Households with Children 16 Years and Under	H	H	H	H	M	L
Rating	H	H	H	H	M	L

. Children 16 Years and Under:	0 - 16.7	= Low
	16.8 - 33.5	= Moderate
	33.6 - 50.3	= High
. Households with Children 16 Years and Under:	0 - 9.7	= Low
	9.8 - 19.5	= Moderate
	19.6 - 29.3	= High
. Index of Income:	Because this is an index which reflects a relative rather than absolute value, sites will not be rated low, moderate or high on this measure. The relative rankings of the sites on this measure will be shown instead.	

Table 5 shows the final rating of the Site Plan Areas based on the above rating system.

2.6 Emotional Impact

This sub-factor will assess the issues of perception of the following:

- Stigma resulting from having a landfill in the community;
- Stress from living near the Site;
- Stress resulting from the selection process;
- Stress resulting from uncertainty about the future.

(a) Measures of Emotional Impact

In assessing this factor, it is fair to assume that the effect of all these four sub-factors is the same at all six Sites, and then to note deviations from these assumptions as appropriate.

With respect to stigma, for example, one may assume that the perceived stigma of knowing there is a landfill in the community is basically the same in Oakville, Milton and Burlington. However, some of these Sites are relatively more visible from main highways than others and/or could contribute to the first impression of the community, due to their proximity to the

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entrance to the Municipality. For example, Site Plan Area F is visible from Highway 403. Site Plan Areas B and C are near the entrance to Oakville for people travelling south on Trafalgar Road. Site D is near the southern entrance to Milton for people travelling north on Highway 25. To the extent that landfills at these Sites would form part of the initial impression of these communities, they would add to the perceived stigma of knowing that there is a landfill at these locations. Two elements then contribute to a site's rating on stigma. One of these is whether or not the site would be visible from a major roadway. The other is whether or not the site is within 2 kilometres of a major entrance to the community, thus contributing to the initial impression of the community.

In assessing stress from living near the site,[7] it is reasonable to assume that, with one exception to be noted later, all people will experience approximately the same amount of stress from this experience. The exception, which has been indicated in the discussion of measures of disruption, is that parents of young children may experience greater stress than other individuals.[8] Hence, the evaluation of this stress is a function of the number of people living in the study area and the number of households with children under 16 in the study area.

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7 Proshansky, H., Nelson-Shulman, Y., and Kaminoff, R. "The role of physical settings in life-crisis experiences." In Sarason, Irwin and Spielberger, Charles (Eds). Stress and Anxiety, Volume 6. Washington, D.C.: Hemisphere Publishing Corporation 1979, p. 6. Proshansky et al. state that changes in physical settings can and do cause intense and sudden stress to individuals.

8 "Waste dumps are toxic socially, too, study finds." Globe and Mail, October 8, 1984.

A consideration of stress resulting from the selection process is included in the social impact assessment to reflect the time, energy and disruption to their lives that people living on-site or in the study area have experienced as a result of their efforts to oppose the Candidate Site(s) in their community being selected as the preferred site. It is recognized, as well, that these activities have placed a strain on their lives and on their lifestyles. As well, it has produced stress as a result of the general uncertainty about the future nature of their lives and their community, in view of the possibility of a landfill being located in their community. This uncertainty is particularly marked for those living on the six Candidate Sites selected at the end of Stage 2B.[9]

As in the case of stress resulting from the prospect of having to live near a landfill, one may reasonably assume that, in general, all individuals living on a Candidate Site or in a study area have experienced the same degree of stress during the site selection process.

In identifying residents living on site, the boundaries of the Candidate Sites identified at the end of Stage 2B will be used (instead of the final Site Plan Areas), since during the latter portion of the selection process these people believed they might have to move.

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9 See Proshansky, H., Nelson-Shulman, Y., and Kaminoff, R. "The role of physical settings in life-crisis experiences." In Sarason, Irwin and Spielberger, Charles (Eds). Stress and Anxiety, Volume 6. Washington DC: Hemisphere Publishing Corporation, 1979, pp 9-10. Proshansky et al. underline the importance of "environmental understanding", "need to know", and "environmental control", a lack of which threatens the individual's well-being and produces stress.

Citizens' groups have argued that the evaluation of stress resulting from the selection process should take into consideration the history of the landfill selection issues in their community. This is appropriately dealt with under the Social Equity factor, and a description of this history may be found there.

Stress resulting from uncertainty about the future [10] is a special element of stress resulting from the selection process. Residents have indicated they feel uncertain about whether or not to make improvements to their property, in view of the possibility that they might have to move (in the case of people living on-site), or their fear that their property will devalue (in the case of people living in the study area).

One may reasonably assume that the uncertainty surrounding this issue, and the stress resulting from that uncertainty, is constant within and across Sites, with the exception of those who earn some portion of their income from activities undertaken on the Site or in the study area. Such people may be additionally unsure as to whether to make additional investments in their property or in their business (for example, the purchase of new farm machinery, or improvements in a studio) until their status has been clarified.

The ranking of Sites with respect to stress resulting from uncertainty about the future will therefore depend on the number of people in the study area and on the Candidate Sites, and the economic activity on site and in the study areas.

As noted above, the boundaries of Candidate Sites at the end of Stage 2B are being used for this measure because, until November 1984 when Site Plan Area boundaries were determined, all people

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10 Ibid.

TABLE 6

MEASURES OF EMOTIONAL IMPACT

Measure	Site A	Site B	Site C	Site D	Site E	Site F
Stress from living near site						
- number of people in study area	244	205	266	233	98	39
- households with children	26	25	28	22	14	5
Stress from selection process						
- number of people on site and in study area	255	237	297	243	105	39
Stress from uncertainty about the future						
- number of people on site and in study area	255	237	297	243	105	39
- Index of Income on site	347	783	360	279	326	0
- Index of Income in study area	2,160	1,664	2,947	2,105	490	190
Stigma[1]						

1. Stigma cannot be measured in quantitative terms, but will be included in the ratings.

living on the Candidate Sites faced the possibility of having to relocate.

Table 6 shows the values for each site on the measures of emotional impact described above.

(b) Ratings for Emotional Impact

The values used to rate the Site Plan Areas on these measures of emotional impact are shown below:

Stress from living near a landfill:

. Number of People in Study Area:	0 - 88.7	= Low
	88.8 - 177.5	= Moderate
	177.6 - 266.3	= High
. Households with Children in Study Area	0 - 9.7	= Low
	9.8 - 19.5	= Moderate
	19.6 - 29.3	= High

Stress from Selection Process:

. Number of People on site and in the Study Area	0 - 99	= Low
	100 - 199	= Moderate
	200 - 299	= High

Stress About Uncertainty About the Future:

. Number of people on site and in the study area	0 - 99	= Low
	100 - 199	= Moderate
	200 - 299	= High
. Index of Income On-site and in the Study Area:	Because these are indexes which reflect a relative rather than absolute value, sites will not be rated low, moderate or high on these measures. The relative rankings of the sites on these measures will be shown instead.	

Stigma

Low - not visible from major roadways and not near major entrance to the community.

Medium - visible from major roadway(s) or near a major entrance to the community.

TABLE 7

RATINGS FOR EMOTIONAL IMPACT

Measure	Site A	Site B	Site C	Site D	Site E	Site F
Stress from living near site	H	H	H	H	M	L
- number of people in study area	(H)	(H)	(H)	(H)	(M)	(L)
- households with children	(H)	(H)	(H)	(H)	(M)	(L)
Stress from selection process	H	H	H	H	M	L
- number of people on site and in study area						
Stress from uncertainty about the future	H	H	H	H	M	L
- number of people on site and in study area	(H)	(H)	(H)	(H)	(M)	(L)
- Index of Income on site	(4)	(6)	(5)	(2)	(3)	(1)
- Index of Income in study area	(5)	(3)	(6)	(4)	(2)	(1)
Stigma	H	H	H	H	M	M
rating	H	H	H	H	M	L

High - visible from major roadway(s) and near a major entrance to the community.

Table 7 shows the final rating of the Site Plan Areas based on the above rating system.

2.7 Disruption of an Established Community

This sub-factor is intended to assess the possible impacts of a landfill on the stability of the community and on the local social networks among residents living near a landfill site.

(a) Measures of Disruption of an Established Community

The longer one has lived in a place, the deeper one's commitment to that place and the more severe the impact of moving becomes, if moving is required. Where a family has lived in the area for several generations, the impact of moving becomes that much greater.[11]

For this reason, two measures of length of residence in the community have been included as part of the social impact assessment, using data obtained from the questionnaire in response to the question, "How long have you and members of your or your spouse's extended family (e.g., parents, grandparents, etc.) lived at or near a candidate site?" The first measure is the maximum length of time obtained in answer to this question at each Candidate Site. The second measure is the median response to this question from people on-site and in the study area combined. Given the nature of the distribution of answers received

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11 See Gans, Herbert. The Urban Villagers. New York: The Free Press, 1962. This psychosociological study showed that urban renewal of an area disrupted the social cohesion that made life satisfying to the residents; for those who moved elsewhere, the psychological cost of relocation was high.

to this question, the median was considered the most appropriate measure to reflect the full range of responses received. (The "median" is a number which has the property of having the same number of scores with smaller values as there are with larger values. It thus divides the distribution of responses in half. The median is one form of average, and is used where there may be extreme scores which might produce misleading results if an average ("mean") were calculated.)

Another possible impact of a landfill in a community is the disruption of social networks.[12] For example, the location of a landfill in a community may disrupt visiting patterns which are a basis of social networks; people within the Site Plan Area will move away, and some residents in the study area may also decide to move; increased traffic may result in decreased visiting in the day-time (on evenings, Sundays and holidays the landfill will be closed). The greater the social support network, the more likely it will be able to withstand some disruption. For example, the loss of one friend or neighbour, when you see 25 in a week, is more easily endured than the loss of one when you only see three in a week.

To assess the current state of social support networks at each of the six Candidate Sites, people were asked to indicate on the questionnaire the number of friends and relatives living within three miles of their house they saw (1) almost every day; (2) two to four times a week; and (3) about once a week. An estimate of the amount of local visiting was constructed by multiplying the number of people they saw by the frequency of visiting them (almost every day = 6, two to four times a week = 3; about once a week = 1). This measure of weekly contacts was calculated for each individual.

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12 Ibid.

In cases where people failed to provide usable information (either because they did not answer the question at all, or simply ticked off the categories without indicating the actual number of people they saw at each frequency), it was necessary to impute a score to them on this measure. The median value for all six Sites combined was determined (27 visits) and this value was assigned to those who failed to answer the question.

This resulted in all sites obtaining the same score on this measure. Because this measure does not assist in distinguishing between the sites, it was not given further consideration.

Table 8 shows the scores for the Site Plan Areas on the two retained measures of this sub-factor.

TABLE 8

MEASURES OF DISRUPTION OF AN ESTABLISHED COMMUNITY

Measure	Site A	B	C	D	E	F
Maximum Length of Residence (Site and Study Area)	175	140	175	155	85	30
Median Length of Residence (Site and Study Area)	21	21	18.5	20	7	15

(b) Ratings for Disruption of an Established Community

The values used to rate the Site Plan Areas on these measures of disruption are shown below:

. Maximum Length of Residence:	0 - 58.3	=	Low
	58.4 - 116.7	=	Moderate
	116.8 - 175.1	=	High
. Median Length of Residence:	0 - 7	=	Low
	8 - 15	=	Moderate
	120 - 179	=	High

Table 9 shows the final rating of the Site Plan Areas based on the above rating system.

TABLE 9

RATINGS FOR DISRUPTION OF AN ESTABLISHED COMMUNITY

Measure	Site Plan Area A	B	C	D	E	F
Maximum Length of Residence	H	H	H	H	M	L
Median Length of Residence	H	H	H	H	L	M
Rating	H	H	H	H	L/M	L/M

2.8 Special Population Groups

Special population groups may, by definition, experience a unique impact as a result of the location of a landfill. In carrying out the social impact assessment, three categories of special population groups have been identified which warrant special attention: residents of institutions on-site, in the study area, or along a haulage route; people with disabilities living in the

community; and people who earn their living as artists, artisans, craftsmen and writers living within a Site Plan Area or in the study area.

(a) Measures of Special Population Groups

The first special population group that needs to be considered is residents of institutions on-site, in the study area, or along a haulage route. These special population groups are included in the social impact assessment because of their vulnerability.

As a result of appropriate screening techniques in Stage 2B, there are no residents of institutions on-site or in the study areas. There are, however, a number of institutions on Highway 25 in Milton (Halton Centennial Manor, a Home for the Aged; the Ernest C. Drury School for the Deaf, and the Residential School for Children with Learning Disabilities) which are along a haulage route to Sites D and E. Also located along Highway 25 is the Halton Developmental Centre, which provides day programs for the developmentally handicapped; and while this is not a residential setting, the people who use this service are also a vulnerable population group, and should be taken into consideration. Similarly, an individual with Down's Syndrome living in the study area for Sites A and C warrants special consideration in this assessment.

Artists, writers, artisans and craftspeople can represent a unique resource to their communities and to the public who enjoy their work. They often find inspiration in their surroundings; many move to a non-urban area because of this and because they find they can work better in this kind of area than in a more urbanized community. If they have to move, they may be more constrained than other residents in finding another suitable location for their work, particularly if they have special spatial needs to carry out their work (e.g., a studio, barn or

shed) which also has to be found at a new location; or if a concentration of such people in one area may enhance the work of any one of them because of the opportunity to share ideas and techniques and even to work together on joint projects, and this concentration is lost with a move. A landfill in the community may disrupt the work of some of these individuals; others may move out of the community. The possible impact of a landfill on this special population group should be taken into account as part of a social impact assessment.

The number of members of this special population group was obtained from information on the questionnaires and the telephone follow-up. In using this information to estimate data on-site and in the study areas it was assumed that there is the same proportion of members of this special population group among those who did not respond to the questionnaire as among those who did.

The number of artists, writers, artisans and craftspeople on the candidate sites and in the study areas is shown below:

Site A:	10
Site B.	7
Site C:	12
Site D.	2
Site E:	1
Site F:	1

b) Ratings for Special Population Groups

The values used to rate this sub-factor are:

Low:	0 - 4
Moderate:	5 - 9
High:	10 - 14

Despite the institutions located along Highway 25, which would be a haul route for Sites D or E, this is not considered a noticeable impact. The buildings are well set back from the highway,

which is already designated a truck route in Milton. It has been estimated by Giffels Associates Limited that a landfill at Sites D or E would result in approximately 10 additional trucks a day on this route, which already carries approximately 700 trucks a day.

The following rating of a landfill therefore has been undertaken on the basis of its possible impact on artists, writers, artisans and craftspeople on-site and in the study areas.

Site A: High
Site B. Moderate
Site C: High
Site D. Low
Site E: Low
Site F: Low

2.9 Mitigation Measures

Two types of mitigation measures are relevant to the population impact. The first type is concerned with mitigating the effects of specific physical impacts such as noise, dust and litter. These are addressed in the technical reports dealing with these specific impacts.[13]

The other type of mitigating measure deals with the possible psychological impact of living near a landfill. The most notable are the worry over possible adverse impacts on health, and the sense of not having control over one's environment.

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13 (Technical Report on Noise Assessment, prepared by Barman, Coulter, Swallow Associates; Technical report on Visual Impact, prepared by The Landplan Collaborative Inc.; Technical report on Land Use and Planning Assessment, prepared by Walker, Wright, Young Associates Limited; Technical report on Air Quality Assessment by Senes Consultants Limited).

In order to address these issues, it is suggested that residents in the area of the selected site be provided opportunities to be involved in the final design of the site, in monitoring its construction and daily operations, and in determining the potential concurrent rehabilitation and/or end-use.

To that end, it is recommended that a liaison committee be formed, similar in structure and purpose to the Burlington Landfill Advisory Committee. The committee could consist of representatives of the residents in the area; a representative of the Region's Solid Waste Management Committee; a representative of the Region's Department of Public Works responsible for solid waste disposal; appropriate staff from the area municipality; the municipal and regional councillors for the area containing the site; a representative from the Conservation Authority; a representative from EEAC; and a representative of the site operator, depending on the circumstances.

The liaison committee could be struck as soon as Regional Council has approved the selection of the preferred site, so that it may work with the consultants in developing the final design and operations plan which will be reviewed by the Ministry of the Environment as part of the Environmental Assessment process. Once approval for the site has been granted, the committee would review the conditions that have been set on the approval, and would work closely with the landfill designer to ensure that these conditions are met.

During the operating phase of the site, the committee would be concerned with the day-to-day operation of the site and would work closely with the landfill operator to ensure that the site is being run in the manner agreed upon and to identify ways in which the site could be run better. As the time for closing the landfill approaches, the committee would also take on responsibility for recommending the after-use of the site and for working closely with those responsible for designing and implementing the after-use.

2.10 Ratings for Population Impact

Having discussed the ratings of the six sites on the individual sub-factors comprising the Population Impact, it is now appropriate to determine the overall ratings of the sites and then to rank them on this factor.

Table 10 below summarizes the ratings of the Site Plan Areas on the five sub-factors included in the Population Impact.

TABLE 10
RATINGS FOR POPULATION IMPACT SUB-FACTORS

Sub-Factor	Site Plan Area A	B	C	D	E	F
Dislocation	L/M	H	H	L	L	L
Disruption	H	H	H	H	M	L
Emotional Impact	H	H	H	H	M	L
Disruption of an Established Community	H	H	H	H	L/M	L/M
Special Population Groups	H	M	H	L	L	L
Overall Rating	H	H	H	M/H	L/M	L

Different patterns of ratings result in the same overall rating, and the low, moderate and high ratings obscure the magnitude of the differences between Sites; therefore, it is necessary to discuss the values and rankings obtained on the social impact measures for each site in order to rank the sites on the basis of the Population Impact. The Site which produces the least impact, based on the population measures used in this report, is the most preferred site on this social impact factor and is given the rank of 1. The site which produces the greatest impact, based on the population measures, is ranked 6th.

Site A.

Site A has the fourth greatest number of people living on-site (11) and, like Sites D and E, has three households and two people 66 years and over on-site. It ranks fourth on both measures of economic activity, and fifth on the number of households with more than four members (though there is only one such household on Site A -- Sites B, D, E and F have none). Site A ranks fifth on the number of children 16 years and under on-site, though here too the absolute number is low; there are two children 16 years and under on Site A, and the high ranking occurs because there is only one on Site B and on Site A, and none on Sites D and F.

On measures related to the study area, Site A ranks fifth with respect to the number of people (244) and the number of households (74). It has the highest number of children 16 years and under in the study area (50) and the second highest number of households with children 16 years and under (26). It is tied with Site C for fourth rank on the measure of economic activity. It ranks highest on the sub-factor dealing with disruption of an established community, and ranks fifth on the emotional impact sub-factor. On the special population group sub-factor, the site also ranks fifth (Sites E and F are tied for first and second rank). Overall, Site A ranks fourth on the measures of Population Impact.

Site B.

Site B has the highest number of people (32) and households (11) on site, the greatest number of people 66 years and over (4) and the highest scores on the general measure of income from activities on site, and on the same measure for people 46 and over. (It should be noted that the scores on the general measure and the measure for people 46 and over is the same, meaning that all the income derived from economic activity on site is for people 46 and over.) On measures related to the study area, Site B ranks third with respect to the number of people (205), the number of households (59) and the measure of economic activity. It has the fourth highest number of children 16 years and under in the study area (44) and the fourth highest

number of households with children 16 years and under (25). This site is very similar to Site D with respect to emotional impact, and both have been ranked 3.5. The site ranks fifth with respect to the disruption of an established community, and fourth on the measure of special population groups (Sites E and F are both ranked 1.5).

Despite the fact that this site has the highest ranking on several of the on-site measures, it is ranked fifth overall on Population Impact because of its relatively lower scores on the other measures of population impact.

Site C.

This site ranks fifth with respect to the number of people (31) and households (8) on site as well as on both measures of economic activity. It ranks highest with respect to the number of households with more than four members (4) and the number of children 16 years and under living on site (10). It has the greatest number of people (266) and households (83) in the study area, and the greatest number of households with children 16 years and under in the study area (29). It ranks fifth with respect to the number of children 16 and under in the study area (49) and is tied for fourth (with Site A) on the general measure of economic activity in the study area.

Although Site B ranks higher than Site C on some of the measures pertaining to people on-site, the absolute size of the differences are not great (1 additional person, 3 additional households, 3 more people 66 years and over) on these measures, whereas the differences between Sites B and C with respect to the study area measures are more substantial. Consequently, Site C is ranked sixth over-all on the Population Impact factor.

Site D.

Site D is in many respects similar to Site A. It ranks third on the number of people on site (10, whereas Site A has 11) and is tied for third (with Sites A and E) with respect to the number of households on-site. Also,

like Sites A and E, Site D has two people 66 years and over on-site and, like Sites A, E, and F, has no households with more than four members. It also has no households with children 16 years and under on-site (like Site F). Site D ranks third on measure of economic activity on-site.

Site D ranks fourth on the number of people in the study area (234, with 244 at Site A) and the 72 households in the study area cause it to be ranked fourth on this measure (Site A has 74). It ranks third on the number of children 16 years and under in the study area (36) and the number of households with children in the study area (22). (Site A has 50 children and 26 households with children 16 and under.) Site D ranks sixth on the measure of income from activities in the study area.

As has been indicated in the discussion of Site B, Sites B and D are both ranked 3.5 on emotional impact. Site D ranks fourth on the sub-factor relating to the disruption of an established community and third on the special population groups sub-factor.

Overall, Site D ranks third on the Population Impact factor.

Site E.

With the exception of its ranking on the sub-factor for disruption of an established community, where Site E ranks first, this Site consistently ranks second on the sub-factors of Population Impact. There is a noticeable difference between the values for Site E on most measures of Population Impact and the next highest values for other Sites on each of these measures.

Consequently, Site E ranks second overall on the Population Impact factor.

Site F.

This site is unique among all the sites since there is no one living on Site F. The site ranks first on all measures of Population Impact used in

this report with the exception of its second rank on the sub-factor dealing with the disruption of an established community. There are 14 households containing 39 residents in the study area. (Site E, with the next highest values on these measures has 30 households with 95 people, more than double the values for Site F.) There is, in fact, a noticeable difference between the values for Site F and the second ranked site on a large number of the measures used in evaluating the Population Impact.

Site F ranks first on the Population Impact factor.

Summary

The overall ranking of the sites on the Population Impact factor from least impact to greatest impact is therefore:

Rank	Site
1	F
2	E
3	D
4	A
5	B
6	C.

3.0 SOCIAL EQUITY

Discussion of social equity (i.e., the fairness of locating a landfill at each of the six candidate sites) is included here as a result of comments made at the first set of workshops in Stage 2C.

While it is recognized that social equity is a factor which bears consideration in the selection of a preferred site, it is also true that the consultant's role is to select the most appropriate site within the context of the Environmental Assessment Act. The question of social equity best rests with those public bodies responsible for making the final decision. The information on social equity is presented here in order to draw their attention to this issue.

3.1 Sites A, B and C

The candidate sites in Oakville have been associated with a former landfill site. In particular, the western portion of Site B is located within 2.1 kilometers (1.4 miles) of the former Oakville landfill site on Fourth Line. This 37.2 hectare (92 acre) landfill was opened in Trafalgar Township for a population of approximately 32,000 people in the early 1960's and then served as a landfill for Oakville when its boundaries expanded to include Trafalgar Township in 1962. With the introduction of regional government in 1974, this site became a regional landfill which accepted waste from Oakville, Milton, and Halton Hills. The site was closed on December 31, 1982.

Oakville is currently estimated to generate 42% of the Region's solid weighed waste.[14] The area in which these sites are located is not serviced by garbage collection.

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14 Walker, Wright, Young Associates Limited, Stage 1: Waste Needs and Systems Analysis.

3.2 Site D

This site is in close proximity to Site E, part of which had been previously selected as a regional landfill site (see the previous discussion of emotional impact for more elaboration of this issue) and some residents in the vicinity have been involved in the community's original efforts to prevent the use of the former site selection, now Site E, for landfilling.

A proposal has been made by the Region for a facility to store treated sludge during periods of adverse weather. Though this proposed facility is actually located in Oakville, it is closer to Site D than to any of the Oakville Sites. The facility will essentially be self-contained and separate access will be provided to the facility, without interference with landfill operations.

As part of the long term waste forecast, it is estimated that Milton generates only 7% of the Region's weighed waste; the area of Site D is not serviced by garbage collection.

3.3 Site E

In January 1977, a portion of Site E was identified as the preferred site for a regional landfill in a study carried out for the Region by M. M. Dillon Ltd. In August 1977, application was made by the Region for an amendment to Milton's Official Plan to allow that site to be so used. A three month hearing before the Ontario Municipal Board was held in early 1979. The Town of Milton and the Tremaine-Britannia Citizens Group opposed the application at the Ontario Municipal Board Hearing. The Region's application for planning approval of that site was confirmed and the site is designated for landfill. However, the use of that site was not implemented due to an Order from the Minister of the Environment placing the selection of a landfill site in Halton under the Environmental Assessment Act, and the site had not obtained sufficient approvals under that legislation.

As part of the long term waste forecast, it is estimated that Milton generates only 7% of the Region's weighed waste; the area of Site E is not serviced by garbage collection.

3.4 Site F

This site is adjacent to Bayview Park, which was formerly a municipal landfill between 1960 and 1972. It is also adjacent to the current regional landfill, which was opened as a municipal landfill in 1972. With the introduction of regional government in 1974, the site became a regional landfill, accepting waste from Burlington and from Milton beginning in 1980. In January 1980, the Ministry of the Environment granted the Region a provisional certificate of approval for expansion of the existing landfill, and in May 1980 the Environmental Assessment Board granted approval for an interim phase of this landfill which was to serve the Region until 1984. With the closing, in December 1982, of the Oakville site, this became the Region's only landfill site.

In May, 1983, the Region commissioned a study of the potential for continued use of the existing Burlington site as a landfill. In February 1984, the Region authorized the execution and submission of an application for the continued use of the landfill site until approximately April 1987 without major waste reduction and/or until the new landfill site for Halton was opened. Approval for the four phase continuation program was issued by the Environmental Assessment Board, subject to conditions, on September 21, 1984.

The West Burlington Ratepayer's Association opposed the application for continued use of the existing landfill and opposes the selection of Site F as a regional landfill. They assert that there has been landfill in their area for over 20 years, and that it is now time for a landfill to be located somewhere else.

As part of the long term waste forecast, it is estimated that Burlington generates about 41% of the Region's weighed wastes. Unlike the case in

Oakville and Milton, the residential areas near this site receive garbage collection.

4.0 COMMUNITY FACILITIES

This factor is intended to measure the possible impact of a landfill on community facilities in the areas surrounding each of the six Candidate Sites. The factor is composed of two sub-factors: the use of public facilities in the vicinity of the Candidate Sites; and the extent to which the area around the landfill serves the larger community. It had also been intended to include here a measure of the extent to which residents living on-site and in the study area use their land for recreational purposes, based on information provided on the questionnaire. However, because of the relatively low return rate for the questionnaire at some Sites, it was considered inappropriate to extrapolate from the questionnaires to the Site and study area as a whole.

The ratings of possible impact on community facilities is included in Sub-section 4.2.

4.1 Interviews

Personal interviews were held in May and June 1984 with the individuals responsible for community facilities in order to determine their view on how the location of a landfill would affect the quantity and quality of services provided at the facility. Requests for confirmation of their positions were sent by mail in September 1984. A brief summary of the comments from these meetings is presented under the discussion of this factor at each site.

SITE A

Trafalgar-Memorial Hall -- Oakville Parks and Recreation Department has indicated they do not feel a landfill at Sites A, B, or C would have adverse impacts on this facility or the extent to which it can be used.

Munn's United Church -- Reverend Schooley, the Minister at this Church, does not believe a landfill would have a significant, direct impact on the

Church. However, he feels that the viability of this congregation depends on its future growth of new families from sub-divisions south of Highway 5, and that if the development of these subdivisions was jeopardized by the location of a landfill at Sites A, B, or C, this in turn would jeopardize the future of the church.

Welding Institute of Canada -- The Welding Institute of Canada is a national research and development facility established to serve the needs of Canada's welding industry. It employs 40 people at this site. In addition to its research and development functions, the Institute also provides training for the industry, some of which is provided on-site.

Potential impacts of a landfill on the Welding Institute were identified by the School, to include visual impact and the impact of airborne contaminants. The potential noise impact is of special concern because the main building of the Institute is used primarily for offices, a library and classroom space.

Burnhamthorpe Road and Ninth Line provide a pleasant location for jogging and bicycling, and are on the route of local bikeathons and walkathons. The residents of the area have made their homes and land available to community groups such as the Oakville Historical Society, the Oakville Toastmasters Club, and the Great Dane Club. Several school groups visit one of the farms in the area on school trips.

SITE B

Trafalgar Memorial Hall -- See comments under Site A.

Munn's United Church -- See comments under Site A.

Welding Institute of Canada -- See comments under Site A.

Munn's Cemetery -- This cemetery is not an active cemetery, and may be considered closed for all intents and purposes. A burial which occured in

the cemetery about a year ago was the first burial there in about 20 years, and it is reasonable to assume that there will be few if any burials in this cemetery in the future, although the cemetery will remain.

In addition to the use of Burnhamthorpe Road and Sixth Line for jogging, bicycling and walkathons. One of the homes on Site B has been the location of various local club picnics, including that of the Hamilton Choral Society. The Sculpture Society of Ontario has met at one of the homes in the study area for Site B.

SITE C

Glen Oaks Memorial Gardens Cemetery -- The owners of this cemetery have indicated that the location of a landfill on Site C would be inconsistent with the Parkway Belt West Plan. This issue is be considered under the planning analysis for implementation of a possible landfill at Site C.

Trafalgar Memorial Hall -- See comments under Site A.

Munn's United Church -- See comments under Site A.

Munn's Cemetery -- See comments under Site B.

Welding Institute of Canada -- See comments under Site A.

A meeting of the Sculpture Society of Ontario has been held at one of the homes on Site C. Picnics for community groups have been held at one of the residences in the study area, and the Oakville Historical Society has held a day-long event at another residence in the study area.

SITE D

Milton District Hospital -- The hospital board has gone on record, via a submission to the Region, as opposing a landfill site in Milton based on three concerns: traffic, airborne contaminants and aesthetics. While the

specific effects are hard to define, the board feels that the closer the landfill is to the hospital, the greater the potential impact from these three concerns. In this context, since Site D is further from the hospital than Site E, it would be perceived to have less impact on the hospital than would Site E.

Boyne Community Hall -- The Director of Planning, and the Director of Parks and Recreation, in Milton felt that a landfill at Site D would have an adverse impact on the Boyne Community Hall because of problems with traffic, noise, airborne contaminants, sea gulls and aesthetics. It was felt these would pose difficulties in keeping the hall respectable, and would make the centre a less attractive location for meetings and social events. Concern was also expressed about the suitability of using the grounds if a landfill were located at Site D, and also about the quality and safety of the water supply, which comes from a well.

St. Clair Masonic Temple -- The St. Clair Masonic Temple is used primarily as a meeting hall for the Masons, although on occasion it is rented out for social events.

St. Clair Cemetery -- This small cemetery is located adjacent to the St. Clair Masonic Temple, about 1.4 kilometres from the northern boundary of the site. The cemetery is for the use of pioneer families in the area who have the right to be buried there, and it is not a very active facility.

SITE E

Milton District Hospital -- See comments under Site D.

Boyne Community Hall -- The Director of Planning and the Director of Parks and Recreation in Milton feel that Site E is sufficiently distant from Boyne Community Hall that it would not have much impact on the operation of the centre or its users.

Ontario Agricultural Museum -- The Program Director and the General Manager at the Museum indicated that their only concern with respect to the location of a landfill at Site E was with traffic safety, due to potential conflicts between haulage trucks and traffic entering and leaving the museum; they were especially concerned about the large number of school buses that visit the museum.

SITE F

Burlington Rifle and Revolver Club -- Several members of the executive of this club indicated they had no concerns at all with respect to the location of a landfill at Site F, and in fact would welcome its location there since this would preclude development which might jeopardize their future at their present location.

Bayview Park -- Representatives of the Parks and Recreation Department and the City Administrator's Office expressed concern about the effect of dust, odour and litter from a landfill on the present and future use of the park. The present uses include cross-country skiing and a riding facility used for weekend horse shows; planned uses include organized soccer and organized baseball. The city representatives also expressed concern about attracting participants to riding shows if the ring overlooks a landfill.

Woodhill Farm, located within the study area for Site F, serves as a community resource for people in Burlington. School groups come on class trips; some of these include children with special problems, such as the mentally retarded, and children with emotional problems. The historic house on the property also attracts visitors, and community groups use the property for meetings and picnics. Last year approximately 1,000 people in the community visited Woodhill Farm.

4.2 Ratings for Community Facilities

Before it is possible to assign ratings on the possible impact of a landfill on community facilities, it is necessary to review the issues raised in the previous summaries.

The sites are considered unique with respect to the use of the area around a landfill by the larger community. Therefore, a comparison of these unique features does not assist in distinguishing between the sites. Consequently, the ratings of the sites on this factor will be based on their own merits to determine the possible impact on the community facilities described in the summaries.

SITE A

The Welding Institute of Canada will not experience noise impact under the 50 dB Leq and 55 dB Leq noise contours,[15] and with proper mitigation will not experience a visual impact either.[16] The impact of airborne contaminants will be controlled here because of measures taken to reduce their impact on properties closer to the site.[17]

As has been noted in the summary on Munn's Church, a landfill at Site A would have no direct impact on the functioning of this facility. With respect to the indirect impact of a landfill on the viability of the church, it should be noted that the church is approximately 3.5 kilometres

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15 Technical report on Noise Impact, prepared by Barman, Coulter, Swallow Associates.

16 Technical report on Visual Impact prepared by The Landplan Collaborative Inc.

17 Technical report on Air Quality Assessment prepared by Senes Consultants Limited.

southwest from the Site Plan Area and this impact is therefore unlikely.

Since a landfill at Site A would not have an impact on the community facilities near the site, Site A is rated low on this factor.

SITE B

The Welding Institute of Canada lies on the 55 dB Leq noise contour for Site B, and this cannot be mitigated.[18]

The concerns about the viability of Munn's Church bear consideration in this evaluation, although a landfill will have no direct impact on the functioning of the Church.

In view of the noise impact on the Welding Institute of Canada, this site is rated moderate with respect to its impact on public buildings and institutions.

SITE C

The Welding Institute of Canada lies within the 55 dB Leq noise contour for Site C, and mitigation of this impact is not possible.[19]

A landfill at Site C would have no direct impact on Munn's Church and, in any case, is just over a mile from a landfill at Site C. It is unlikely that a landfill at Site C would affect the future of the church.

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18 Technical report on Noise Impact prepared by Barman, Coulter, Swallow Associates Limited.

19 Ibid.

Due to the noise impact of a landfill at Site C on the Welding Institute of Canada, this site is rated high on this measure.

SITE D

The social impact concerns of the Milton District Hospital with respect to possible traffic impact of a landfill at Site D are not justified, since it is not along a haul route for Site D. Their concern about possible airborne contaminants is not supportable either, since mitigating measures used to control this for properties nearer the site will also prevent their dispersion to the hospital.[20] The concern about the aesthetic impact is somewhat supported by the Visual Impact assessment, since Site D can be seen from the hospital, though it will be relatively easy to screen.[21] The hospital is located well beyond the 50 and 55 dB Leq noise contours for Site D.[22]

The Boyne Community Hall is located within half a kilometre of Highway 25, which is a haulage route to Site D. However, Highway 25 is already a designated truck route, and the additional trucks resulting from a landfill at Site D are estimated by Giffels Associates Limited to represent only about a 1% increase. Furthermore, the hall is used primarily in the evenings and on weekends, when trucks will not be hauling waste to Site D.

The Boyne Community Hall is below the crest of a hill lying between the hall and Site D, and therefore the landfill would not be visible from the

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20 Technical Report on Air Quality Assessment prepared by Senes Consultants Limited.

21 Technical Report on Visual Impact prepared by Landplan Collaborative Inc.

22 Technical Report on Noise Impact prepared by Barman, Coulter, Swallow Associates Limited.

hall.[23] Concern about airborne contaminants are also not supportable, since, as has been noted with respect to the Milton District Hospital, mitigating measures to control this impact for properties nearer the site will also prevent their dispersion to the Boyne Community Hall.[24]

The activities at the St. Clair Masonic Lodge are held indoors, in the evenings and on week-ends. Therefore, the impacts of traffic, aesthetics and airborne contaminants are slight. The Lodge is located approximately 1.4 kilometres fro the Site and it is felt that landfilling would not have an adverse effect on the function of the Lodge.

The cemetery associated with the St. Clair Masonic Hall is little used now, and will not be affected by airborne contaminants.[25] The effect of any additional truck traffic would be negligible. Similarly, the distance of the cemetery from the site would not affect its function.

Although most of the concerns expressed about the impact of a landfill at Site D on pubic buildings and institutions are not supported when mitigation measures are considered, the impact is rated moderate because of the possible visual impact of a landfill on the Milton District Hospital.

SITE E

The concerns of the Milton District Hospital about traffic are not supported, since neither Derry Road nor First Line are along a haulage route to Site E. Neither is the concern about airborne contaminants, as

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23 Technical Report on Visual Impact prepared by The Landplan Collaborative Inc.

24 Technical Report on Air Quality Assessment prepared by Senes Consultants Limited.

25 Ibid.

has been noted under the discussion of this issue at Site D.[26] However, the concerns about the possible aesthetic impact are justified, since one side of the site would be visible from the hospital.[27] There will be no noise impact, since the hospital is located well beyond the 50 and 55 dB Leq noise contours for the site.[28] The concern of the Boyne Community Hall is dealt with previously under Site D.

The concern of the Ontario Agricultural Museum about conflicts between trucks and traffic going to the museum is not warranted, since the museum is not located along a haul route to Site E.

Due to the visual impact of a landfill on the hospital, this site is rated moderate with respect to its impact on public buildings and institutions.

SITE F

The concerns expressed about the possible impact of a landfill at Bayview Park are partially supported, even when mitigating measures are taken into account. Dust and litter are not expected to be a major problem when mitigation measures are in place, though the occasional high wind could result in this blowing into the park.[29] The concerns about the visual impact of a landfill are warranted, not only with respect to the Riding

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26 Ibid.

27 Technical Report on Visual Impact prepared by The Landplan Collaborative Inc.

28 Technical Report on Noise Impact, prepared by Barman, Coulter, Swallow Associates.

29 Technical Report on Air Quality Assessment prepared by Senes Consultants Limited.

Ring but also with respect to the use of the park as a place for possible recreation (e.g., picnics) and the enjoyment of the view.[30]

Though not a concern expressed by Burlington officials during the interview, the impact of noise on the park must also be considered. For approximately three to four years, while the northern portion of the site is being filled, the park will fall within the 55 dB Leq noise contour.[31] This may have an effect on some of the horse shows, since some of the larger ones begin on Thursday or Friday and continue through the week-end. As well, during this period the noise will probably discourage use of the park for passive recreation on week-days.

It would appear, therefore, that without proper mitigation, the Bayview Park could not continue to serve its present functions for the period when a landfill would be operating at Site F. The physical impacts cannot be fully mitigated; the visual impact will remain while the site is in operation, and noise during the day will be a problem for at least three to four years. The only other form of mitigation, therefore, is to move the affected activities at this park to another location.

This suggestion for mitigation is not made lightly, but a review of the Parks and Recreation Master Plan for the City of Burlington (Approved by Council in 1981), suggests this is reasonable.

Bayview Park is one of three Community Parks in the North/South Aldershot District, and there are two more Community Parks in the Nelson District; just east of Aldershot. In Aldershot, the ratio of total park space is 12.1 acres per 1,000 population. The ratio of Community Park space only in

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30 Technical Report on Visual Impact prepared by The Landplan Collaborative Inc.

31 Technical Report on Noise Impact, prepared by Barman, Coulter, Swallow Associates.

Aldershot is 9.6 acres per 1,000 population. If the Bayview Park was removed from operation, the ratios in Aldershot District would drop to 9.4 acres per 1,000 population for total park space and 7.0 acres per 1,000 for Community Park space. Both of these ratios are well above the City guideline of 6.3 acres per 1,000 population for all parks within the urban area to maintain the present level of service. The city-wide average in 1981 for Community Park space was 4.9 acres per 1,000 population.

The feasibility of closing Bayview Park cannot be considered only a question of acreage, but must also consider the ways in which the facility is used now and plans for its future use.

At present, Bayview Park is the location for passive activities (e.g., for picnics and as a viewing spot) as well as being the location of a riding ring. Other nearby community parks can serve the needs for passive recreation now enjoyed at Bayview Park; and for example, Hidden Valley Park, located south of the CN Rail line and abutting the western extremity of the Royal Botanical Gardens, already has picnic facilities. With regard to the riding ring facility, people currently travel long distances to attend horse shows at Bayview Park (some entrants come from other parts of Ontario and parts of the United States), and therefore it has some recognition, but it does appear to be in a local context that would be adversely affected by a move. Therefore, the siting of the existing ring, or the proximity of a new riding ring to the current one is not considered essential, and a distance of 5 or 10 miles would be considered acceptable, as long as the new ring, like the existing one, was located away from residential areas. It therefore appears both feasible and reasonable that the recreational opportunities at Bayview Park can be provided elsewhere.

The impact of a landfill on Community Facilities in Burlington is rated Low.

In the final ranking of the Sites with respect to impact on Community Facilities, the Sites are ranked in order from the least impact to the

greatest impact; the Site with least impact is the most preferred site for landfilling with respect to the impact on community facilities.

The final ranking of the Sites on this factor, from lowest impact to highest impact, is:

Rank	Site
1	Site F
2	Site A
3	Site B
4	Site D
5	Site E
6	Site C

Summary

The final ranking on Social Impact must take into consideration the rankings of the sites on the noise impact; visual impact; impact of airborne contaminants; and compatibility with existing and future land use.

A summary of the rankings on the Social Impact factors discussed in this report is shown below:

Rank	Population Impact	Community Facilities
1	Site F	Site F
2	Site E	Site A
3	Site D	Site B
4	Site A	Site D
5	Site B	Site E
6	Site C	Site C